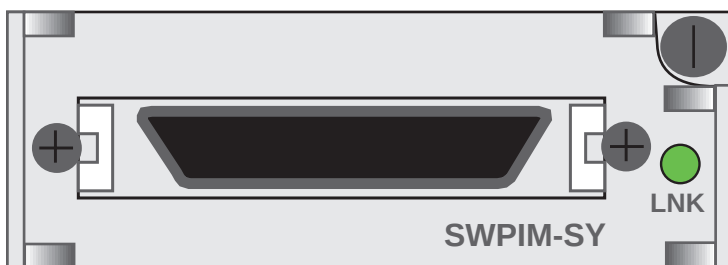


SWPIM-SY

Installation Guide





Only qualified personnel should perform installation procedures.

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73/23/EEC

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Conformance to Directive(s)/Product Standards: EC Directive 89/336/EEC
EC Directive 73/23/EEC
EN 55022
EN 50082-1
EN 60950

Equipment Type/Environment: Networking Equipment, for use in a
Commercial or Light Industrial
Environment.

We the undersigned, hereby declare, under our sole responsibility, that the equipment packaged with this notice conforms to the above directives.

Manufacturer	Legal Representative in Europe
Mr. Ronald Fotino	Mr. J. Solari
Full Name	Full Name
Compliance Engineering Manager	Managing Director - E.M.E.A.
Title	Title
Rochester, NH, USA	Newbury, Berkshire, England
Location	Location

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INTRODUCTION



Only qualified personnel should perform installation procedures.

Welcome to the Cabletron Systems *SWPIM-SY Installation Guide*. This manual provides an introduction to the SWPIM-SY, lists features and capabilities, details the cabling pinouts, and explains how to install the SWPIM-SY.

The SWPIM-SY (Sliding WAN Physical Interface Module) provides six different synchronous/asynchronous serial interface protocol connections to external communications equipment (e.g., a multiplexer or CSU/DSU) for a host platform designed to receive the SWPIM architecture.



The term “host platform” may be used to indicate the device or interface module, such as the SSR-600 or the HSIM-SSR-600, into which the SWPIM-SY is installed.

USING THIS GUIDE

Read through this guide completely to understand the features and capabilities of the SWPIM-SY.

A general working knowledge of WAN and Ethernet and IEEE 802.3 data communications networks and their physical layer components is helpful before using the SWPIM-SY.

STRUCTURE OF THIS GUIDE

This guide is organized as follows:

This **Introduction** provides preliminary information that will aid in using this manual, lists technology and user’s guides that may help the user to set up and manage the SWPIM-SY, and gives an overview of the SWPIM-SY and its features, and information on how to get help from Cabletron Systems.

Chapter 1, Installation, provides instructions on how to install the device into a host platform, and gives the LED indications.

Appendix A, Specifications, contains information on functionality and operating specifications, connector pinouts for the SWPIM-SY, environmental requirements, and physical properties.

Appendix B, Cables and Pinouts, provides Cabletron Systems part numbers and detailed connector and pinout information for the different interface cables used with the SWPIM-SY.

SWPIM-SY FEATURES

The SWPIM-SY can be installed into any Cabletron Systems product that supports the SWPIM architecture, such as the SSR-600, or the HSIM-SSR-600.

The SWPIM-SY uses a 36-pin AMP female connector supporting the following electrical signal interfaces:

- EIA- 232-D
- EIA- 449
- V.35
- X.21
- EIA-530
- EIA-530A

Refer to **Appendix B** for the Cabletron Systems part numbers and pin assignments for these cables.

The interface network cable types are software detectable. The SWPIM-SY detects the type of cable attached and whether it is DTE or DCE.

The SWPIM-SY is capable of receiving or transmitting clock in either DTE or DCE mode.

Refer to the host platform software user's manual for information on how to configure the SWPIM-SY using software.

The SWPIM-SY has an LED to indicate link, traffic, and standby conditions. Refer to **Chapter 1** for more details.

For supported WAN protocols, refer to the host platform software user's manual.

RELATED MANUALS

The following Cabletron Systems manuals may help the user to set up and manage the SWPIM-SY:

SSR-600 Installation Guide

HSIM-SSR-600 Installation Guide

6C105 SmartSwitch 6000 Overview and Setup Guide

Ethernet Technology Guide

Cabling Guide

The manuals referenced above can be obtained on the World Wide Web in Adobe Acrobat Portable Document Format (PDF) at the following site:

<http://www.cabletron.com/>

Cabletron Systems applicable software manuals for the SSR-600 and the HSIM-SSR-600 host platforms (Cabletron Routing Software Manuals):

Bridging Configuration Guide

Event Logging System Message Guide

Network Interface Operations Guide

Routing Protocols Reference Guide

Routing Protocols User's Guide

System Software Guide

ClearVISN Routing Configurator User's Guide

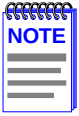
Systems Network Architecture Guide

Quick Reference Guide

DTF (Data Trace Facility) User Guide

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Caution symbol. Contains information essential to avoid damage to the equipment.



Electrical Hazard Warning symbol. Warns against an action that could result in personal injury or death due to an electrical hazard.

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To send comments or suggestions concerning this document, contact the Cabletron Systems Technical Writing Department via the following email address: TechWriting@cabletron.com <i>Make sure to include the document Part Number in the email message.</i>	

Before calling Cabletron Systems, have the following information ready:

- Your Cabletron Systems service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- The serial and revision numbers of all involved Cabletron Systems products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

CHAPTER 1

INSTALLATION



Only qualified personnel should install the SWPIM-SY.

This chapter covers the following items:

- Unpacking the SWPIM-SY ([Section 1.1](#))
- Installing the SWPIM-SY into the host platform ([Section 1.2](#))
- A description of the LANVIEW LED indications ([Section 1.3](#))
- Connecting the SWPIM-SY to the network ([Section 1.4](#))
- What to do once the SWPIM-SY is installed ([Section 1.5](#))

1.1 UNPACKING THE SWPIM-SY

Use static electricity precautions when handling the SWPIM-SY.

1. Open the packing box and remove the SWPIM-SY.
2. Attach the antistatic strap (refer to the instructions in the antistatic wrist strap package) before removing the SWPIM-SY from the antistatic packaging.



Failure to observe static safety precautions could cause damage to the SWPIM-SY. Follow static safety handling rules and wear the antistatic wrist strap shipped with the SWPIM-SY.

Do not cut the non-conductive bag to remove the device. Damage could result from sharp objects contacting the device or components.

3. Verify that the SWPIM-SY is undamaged. Refer to [Getting Help](#) if there is any damage to the device. Do not attempt to install the SWPIM-SY if it is damaged.

1.2 INSTALLING THE SWPIM-SY

The SWPIM-SY can be installed in any available open slot in the host platform. To install the SWPIM-SY, proceed as follows:

1. You do not need to power down the host platform to install the SWPIM-SY. The SWPIM-SY can be installed into the host platform with the power on or off.
2. Remove the blank panel covering the slot in the host platform in which the SWPIM-SY will be installed, by prying it off the faceplate.
3. Ensure that the antistatic wrist strap is attached and employed as recommended.



Observe all precautions to prevent damage from Electrostatic Discharge (ESD).

4. Remove the SWPIM-SY from the plastic bag. (Save the bag in the event the device must be removed from the host platform).
5. Hold the SWPIM-SY with the faceplate facing away (right side up) from the host platform. The 40-pin connector should be facing towards the empty slot, with the wide part of the connector oriented down. See [Figure 1-1](#).
6. Locate the rail guides inside the slot in which the SWPIM-SY will be installed. See [Figure 1-1](#).
7. Install the SWPIM-SY in the host platform by aligning the SWPIM-SY with the rail guides in the host platform and sliding it in. Take care that the SWPIM-SY slides in straight and properly engages the backplane host connector. Do not force the device.

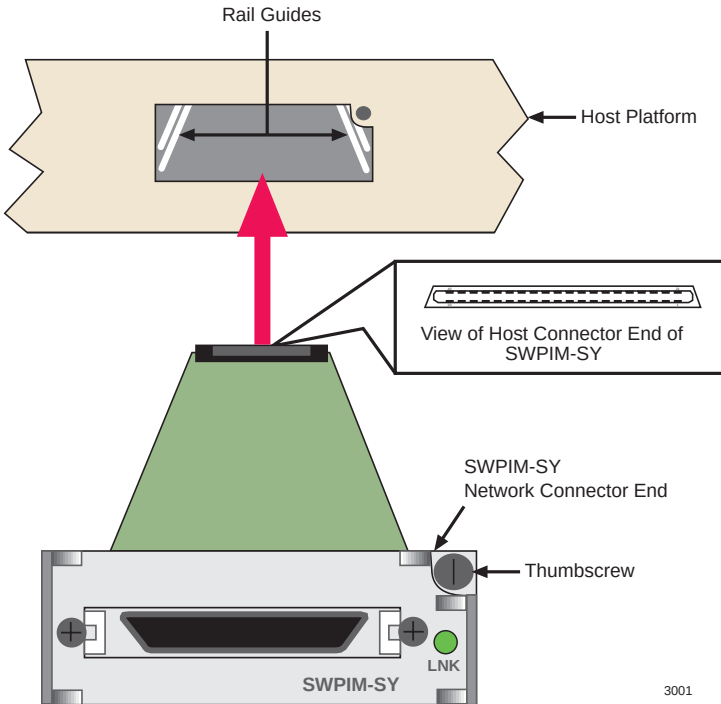


Figure 1-1 Installing the SWPIM-SY into the Host Platform

8. Fasten the SWPIM-SY with the thumbscrew.
9. Replace power to the host platform, if necessary. Check to see that the host platform LED indicators go to their normal configuration. If they do not, remove the SWPIM-SY from the host platform and contact Cabletron Systems.



Do not connect any WAN cables until the SWPIM-SY has been configured in software. The phone company can shut down a line that has an unconfigured connection on it.

10. The SWPIM-SY must be configured before the WAN connection is made. Once the SWPIM-SY has been configured, the host platform must undergo a soft or hard restart in order for the SWPIM-SY to be recognized and for traffic to pass. Refer to the appropriate software manual to configure the SWPIM-SY.

1.3 LANVIEW LED INDICATIONS

Refer to [Table 1-1](#) for the link LED indications for the SWPIM-SY. The link LED is multicolored and will display different colors and on/off rates to indicate different situations.

Table 1-1 Link LED

Color	Indication
Off	Disabled or not configured
Red	No Link
Amber	Transmit or Receive Traffic
Blinking Amber	Loopback Test Mode
Green	Port is Active
Blinking Green	Port is in test mode

1.4 CONNECTING TO THE NETWORK

[Figure 1-2](#) depicts a common configuration for the SWPIM-SY. It is shown only as an example of a setup used for the SWPIM-SY.

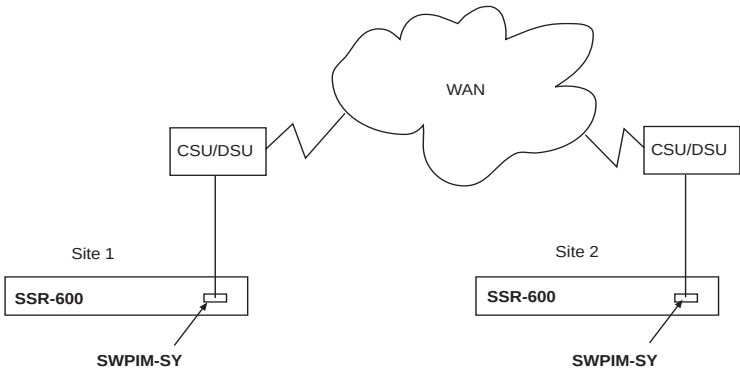


Figure 1-2 Common Configuration for the SWPIM-SY

Figure 1-3 shows the V.35 cable typically used for connecting the SWPIM-SY to the network. One end has thumbscrews to attach, and the other uses a push-release mechanism whereby the connector is removed by squeezing the release buttons.

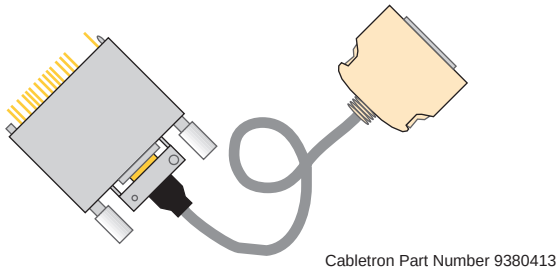


Figure 1-3 V.35 Cable

1.5 COMPLETING THE INSTALLATION

After installing the SWPIM-SY, the SWPIM-SY will need to be configured for the network. Refer to the host platform documentation in order to set up and manage the SWPIM-SY using the software.

APPENDIX A

SPECIFICATIONS

This section describes the environmental specifications, and safety and approval requirements for the SWPIM-SY. Cabletron Systems reserves the right to change these specifications at any time without notice.

A.1 PHYSICAL PROPERTIES

Dimensions: 1.98 H x 5.40 W x 19.35 D (cm)
0.78 H x 2.125 W x 7.62 D (in)

Weight (Unit): .068 kg (0.15 lb)

Nominal current draw on +5V
supply from host platform: 350 mA

MTBF (Predicted): 65,681,445 hours

A.2 NETWORK INTERFACE

The SWPIM-SY uses a 36-pin AMP female connector for the network port that supports the electrical signal interfaces in [Table A-1](#). [Table A-1](#) also shows the minimum and maximum speeds of the Synchronous/Asynchronous module:

Table A-1 Interface Performance

Interface	Minimum Speed	Maximum Speed
EIA- 232-D	1.2 Kbps	256 Kbps
EIA- 449	1.2 Kbps	8 Mbps
V.35	1.2 Kbps	8 Mbps
X.21	1.2 Kbps	8 Mbps
EIA-530	1.2 Kbps	8 Mbps
EIA-530A	1.2 Kbps	8 Mbps

The network interface pin assignments for the network connector are listed in [Table A-2](#). “Dir. To” indicates the direction of the signal.

Table A-2 Network Interface Connector Pin Assignment

Signal	Dir. To	Pin	Signal	Dir. To	Pin
GND	-	1	CID0	-	19
CID1_	-	2	CID2_	-	20
DCEDTE_	-	3	GND	-	21
DSR_A	DTE	4	DSR_B	DTE	22
TXD_A	DCE	5	TXD_B	DCE	23
DCD_A	DTE	6	DCD_B	DTE	24
GND	-	7	GND	-	25
RTS_A	DCE	8	RTS_B	DCE	26
CTS_A	DTE	9	CTS_B	DTE	27
RXD_A	DTE	10	RXD_B	DTE	28
RI	DTE	11	TM	DTE	29
NC	-	12	CID3_	-	30
RXC_A	DTE	13	RXC_B	DTE	31
DTR_A	DCE	14	DTR_B	DCE	32
SCTE_A	DCE	15	SCTE_B	DCE	33
GND	-	16	GND	-	34
TXC_A	DTE	17	TXC_B	DTE	35
LL	DCE	18	RL	DCE	36
SHIELD	-	M1	SHIELD	-	M2

Note:

CIDn = Cable Identity (n)

LL = Local Loopback

DCEDTE = DCE (High) or DTE (Low)

RL = Remote Loopback

TM = Test Mode

A.3 ENVIRONMENTAL REQUIREMENTS

Operating Temperature:	+5° to +40°C (41° to 104°F)
Non-operating Temperature:	-30° to +90°C (-22° to 194°F)
Operating Humidity:	5% to 90% (Non-condensing)

A.4 REGULATORY COMPLIANCE

Safety	UL 1950 (without D3 deviations), CSA C22.2 No. 950, and EN 60950
EMI	FCC Part 15 Class A, EN 55022 Class A and VCCI Class I
Electromagnetic Compatibility (EMC)	EN 50082-1 including: IEC 801-2 (ESD), IEC 801-3 (Radiated Susceptibility), and IEC 801-4 (EFT/B)
NEBS	TR-NWT-000063: Network Equipment Building System (NEBS) Generic Equipment Requirements GR-1089-CORE: EMC and Electrical Safety Generic Criteria for Network Telecommunications Equipment
Telecom	CTR-2 Compliant, listed under TUV-Rheinland

APPENDIX B

CABLES AND PINOUTS

This appendix provides Cabletron Systems part numbers and connector pinouts for the following interface cables:

- EIA-449
- CCITT V.35
- EIA-232
- CCITT X.21
- EIA-530
- EIA-530A

B.1 INTERFACE CABLE PART NUMBERS

Table B-1 lists the DTE interface cable part numbers and table numbers for the SWPIM-SY. The standard length for all cables is 10 feet.

Table B-1 DTE Interface Cable Types and Cabletron Part Numbers

Interface Type	Maximum Length (feet)	Cabletron Part Number	Table Number
RS449	500	9380414	Table B-3
CCITT V.35	200	9380413	Table B-4
RS232	50	9380412	Table B-5
CCITT X.21	500	9380410	Table B-6
EIA-530	500	9380411	Table B-7
EIA-530A	500	9380420	Table B-8

Table B-2 lists the DCE interface cable part numbers and table numbers for the SWPIM-SY. The standard length for all cables is 10 feet.

Table B-2 DCE Interface Cable Types and Cabletron Part Numbers

Interface Type	Maximum Length (feet)	Cabletron Part Number	Table Number
RS449	500	9380419	Table B-9
CCITT V.35	200	9380418	Table B-10
RS232	50	9380415	Table B-11
CCITT X.21	500	9380417	Table B-12
EIA-530	500	9380416	Table B-13
EIA-530A	500	9380421	Table B-14



For all the following tables, “Dir To” indicates the direction of the signal.

Notes at the bottom of all the tables in this Appendix are supplied as reference information for cable construction. They can be ignored if the cable has been supplied by the vendor.

B.2 RS449 / DTE CABLE

Cable Part Number: 9380414

Table B-3 RS449 / DTE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) RS449 / DTE			P A I R	Connector # 2 (DB 37 Pin Male Conn. w/Back Shell) RS449 / DCE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne-monic
	Signal Common	25		20	Signal common	RC
DTE	DSR-A DCE Ready	4	A	11	DSR-A DCE Mode	DM
DTE	DSR-B DCE Ready	22		29	DSR-B DCE Mode	DM
DCE	TXD-A Transmit Data	5	B	4	TXD-A Transmit Data	SD
DCE	TXD-B Transmit Data	23		22	TXD-B Transmit Data	SD

Table B-3 RS449 / DTE Cable (Continued)

Connector # 1 (36 Pin Male Conn. w/Back Shell) RS449 / DTE			P A I R	Connector # 2 (DB 37 Pin Male Conn. w/Back Shell) RS449 / DCE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne-monic
DTE	DCD-A Receiver Ready	6	C	13	DCD-A Receiver Ready	RR
DTE	DCD-B Receiver Ready	24		31	DCD-B Receiver Ready	RR
DCE	RTS-A Req. to Send	8	D	7	RTS-A Req. to Send	RS
DCE	RTS-B Req. to Send	26		25	RTS-B Req. to Send	RS
DTE	CTS-A Clear to Send	9	E	9	CTS-A Clear to Send	CS
DTE	CTS-B Clear to Send	27		27	CTS-B Clear to Send	CS
DTE	RXD-A Receive Data	10	F	6	RXD-A Receive Data	RD
DTE	RXD-B Receive Data	28		24	RXD-B Receive Data	RD
DTE	RI Ring Indicator	11		15	RI Incoming Call	IC
DTE	RXC-A Receive Timing	13	G	8	RXC-A Receive Timing	RT
DTE	RXC-B Receive Timing	31		26	RXC-B Receive Timing	RT
DCE	DTR-A Terminal Ready	14	H	12	DTR-A Terminal Ready	TR
DCE	DTR-B Terminal Ready	32		30	DTR-B Terminal Ready	TR
DCE	SCTE-A Transmit Timing	15	I	17	SCTE-A Terminal Timing	TT
DCE	SCTE-B Transmit Timing	33		35	SCTE-B Terminal Timing	TT
DTE	TXC-A Transmit Timing	17	J	5	TXC-A Send Timing	ST
DTE	TXC-B Transmit Timing	35		23	TXC-B Send Timing	ST
DCE	LL Local Loopback	18		10	LL Local Loopback	LL
DTE	TM Test Mode	29		18	TM Test Mode	TM
DCE	RL Remote Loopback	36		14	RL Remote Loopback	RL
DTE	DCEDTE_	*3/7				
DTE	CID1 Cable ID	*2/21				
	Signal Common	16		19 37	Signal Ground / Signal common	SG / SC
	Shield DRAIN	1				

Note: * For DTE attach DCEDTE_ pin #3 to pin #7

* For Cable ID attach CID1 pin #2 to pin #21

B.3 CCITT V.35 / DTE CABLE

Cable Part Number: 9380413

Table B-4 CCITT V.35 /DTE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) CCITT V.35 / DTE			P A I R	Connector # 2 (M Series 34 Pin Male Conn. w/Back Shell) CCITT V.35 / DCE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	TXD-A Transmit Data	5	A	P	TXD-A Transmit Data	103
DCE	TXD-B Transmit Data	23		S	TXD-B Transmit Data	103
DTE	RXD-A Receive Data	10	B	R	RXD-A Receive Data	104
DTE	RXD-B Receive Data	28		T	RXD-B Receive Data	104
DTE	CTS Clear to Send	9		D	CTS Clear to Send	106
DCE	RTS Req. to Send	8		C	RTS Req. to Send	105
DTE	DCD Carrier Detect	6		F	DCD Carrier Detect	
DTE	TXC-A Transmit Timing	17	C	Y	TXC-A Transmit Timing	114
DTE	TXC-B Transmit Timing	35		AA	TXC-B Transmit Timing	114
DTE	RXC-A Receive Timing	13	D	V	RXC-A Receive Timing	115
DTE	RXC-B Receive Timing	31		X	RXC-B Receive Timing	115
DCE	SCTE-A Transmit Timing	15	E	U	SCTE-A Transmit Timing	113
DCE	SCTE-B Transmit Timing	33		W	SCTE-B Transmit Timing	113
DTE	RI Ring Indicator	11		J	RI Ring Indicator	125
DCE	RL Remote Loopback	36		N	RL Remote Loopback	140
DCE	LL Local Loopback	18		L	LL Local Loopback	141
DTE	TM Test Mode	29		NN	TM Test Mode	142
DTE	DSR DCE Set Ready	4		E	DSR Data Set Ready	107
DCE	DTR DTE Term Ready	14		H	DTR Data Term Ready	108

Table B-4 CCITT V.35 /DTE Cable (Continued)

Connector # 1 (36 Pin Male Conn. w/Back Shell) CCITT V.35 / DTE			P A I R	Connector # 2 (M Series 34 Pin Male Conn. w/Back Shell) CCITT V.35 / DCE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DTE	CID0 Cable ID	*19/21				
DTE	CID1 Cable ID	* 2/21				
DTE	DCEDTE_	* 3/7				
	Signal Ground	25		A	Signal Ground	
	Signal common	16		B	Signal Common	102
	Shield DRAIN	1				

Note: * For DTE attach DCEDTE_ pin #3 to pin #7
 * For Cable ID attach CID0 pin #19 to pin #21
 * For Cable ID attach CID1 pin #2 to pin #21

B.4 RS232 / DTE CABLE

Cable Part Number: 9380412

Table B-5 RS232 / DTE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) RS232 / DTE			P A I R	Connector # 2 (DB 25 Pin Male Conn. w/Back Shell) RS232 / DCE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	TXD Transmit Data	5		2	TXD Transmit Data	BA
DTE	RXD Receive Data	10		3	RXD Receive Data	BB
DTE	CTS Clear to Send	9		5	CTS Clear to Send	CB
DCE	RTS Req. to Send	8		4	RTS Req. to Send	CA
DTE	DCD Carrier Detect	6		8	DCD Carrier Detect	
DTE	TXC Transmit Timing	17		15	TXC Transmit Timing	DB
DTE	RXC Receive Timing	13		17	RXC Receive Timing	DD
DCE	SCTE Transmit Timing	15		24	SCTE Transmit Timing	DA
DTE	RI Ring Indicator	11		22	RI Ring Indicator	CE
DCE	RL Remote Loopback	36		21	RL Remote Loopback	RL
DCE	LL Local Loopback	18		18	LL Local Loopback	LL
DTE	TM Test Mode	29		25	TM Test Mode	TM
DTE	DSR DCE Ready	4		6	DSR DCE Ready	CC
DCE	DTR DTE Ready	14		20	DTR DTE Ready	CD
DTE	CID0 Cable ID	*19/21				
DTE	DCEDTE_	* 3/7				
	Signal Common	16		7	Signal Common	AB
	Shield DRAIN	1				

Note: * For DTE attach DCEDTE_ pin #3 to pin #7
* For Cable ID attach CID0 pin #19 to pin #21

B.5 CCITT X.21 / DTE CABLE

Cable Part Number: 9380410

Table B-6 CCITT X.21 / DTE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) CCITT X.21 / DTE			P A I R	Connector # 2 (DB 15 Pin Male Conn. w/Back Shell) CCITT X.21 / DCE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	TXD-A Transmit Data	5	A	2	TXD-A Transmit Data	T
DCE	TXD-B Transmit Data	23		9	TXD-B Transmit Data	T
DTE	RXD-A Receive Data	10	B	4	RXD-A Receive Data	R
DTE	RXD-B Receive Data	28		11	RXD-B Receive Data	R
DTE	CTS-A Clear to Send	9	C	5	CTS-A Clear to Send	I
DTE	CTS-B Clear to Send	27		12	CTS-B Clear to Send	I
DCE	RTS-A Req. to Send	8	D	3	RTS-A Req. to Send	C
DCE	RTS-B Req. to Send	26		10	RTS-B Req. to Send	C
DTE	RXC-A Receive Timing	13	E	6	RXC-A Receive Timing	S
DTE	RXC-B receive Timing	31		13	RXC-B receive Timing	S
DTE	CID2 Cable ID	*20/21				
DTE	DCEDTE_	*3/7				
	Signal Common	16		8	Signal Common	G
	Shield DRAIN	1				

Note: * For DTE attach DCEDTE_ pin #3 to pin #7

* For Cable ID attach CID2 pin #20 to pin #21

B.6 EIA-530 / DTE CABLE

Cable Part Number: 9380411

Table B-7 EIA-530 / DTE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) EIA-530 / DTE			P A I R	Connector # 2 (DB 25 Pin Male Conn. w/Back Shell) EIA-530 / DCE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	TXD-A Trans. Data	5	A	2	TXD-A Trans. Data	BA
DCE	TXD-B Trans. Data	23		14	TXD-B Trans. Data	BA
DTE	RXD-A Rec. Data	10	B	3	RXD-A Rec. Data	BB
DTE	RXD-B Rec. Data	28		16	RXD-B Rec. Data	BB
DTE	CTS-A Clear to send	9	C	5	CTS-A Clear to send	CB
DTE	CTS-B Clear to send	27		13	CTS-B Clear to send	CB
DCE	RTS-A Req. to Send	8	D	4	RTS-A Req. to Send	CA
DCE	RTS-B Req. to Send	26	D	19	RTS-B Req. to Send	CA
DTE	DCD-A Carrier Detect	6	E	8	DCD-A Carrier Detect	CF
DTE	DCD-B Carrier Detect	24		10	DCD-B Carrier Detect	CF
DTE	TXC-A Trans. Timing	17	F	15	TXC-A Trans. Timing	DB
DTE	TXC-B Trans. Timing	35		12	TXC-B Trans. Timing	DB
DTE	RXC-A Rec. Timing	13	G	17	RXC-A Rec. Timing	DD
DTE	RXC-B Rec. Timing	31		9	RXC-B Rec. Timing	DD
DCE	SCTE-A Trans.Timing	15	H	24	SCTE-A Trans.Timing	DA
DCE	SCTE-B Trans.Timing	33		11	SCTE-B Trans.Timing	DA
DCE	RL Remote loopback	36		21	RL Remote loopback	RL
DCE	LL Local Loopback	18		18	LL Local Loopback	LL
DTE	TM Test Mode	29		25	TM Test Mode	TM

Table B-7 EIA-530 / DTE Cable (Continued)

Connector # 1 (36 Pin Male Conn. w/Back Shell) EIA-530 / DTE			P A I R	Connector # 2 (DB 25 Pin Male Conn. w/Back Shell) EIA-530 / DCE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DTE	DSR-A DCE Set Ready	4	I	6	DSR-A DCE Set Ready	CC
DTE	DSR-B DCE Set Ready	22		22	DSR-B DCE Set Ready	CC
DCE	DTR-A DTE Term Ready	14	J	20	DTR-A DTE Term Ready	CD
DCE	DTR-B DTE Term Ready	32		23	DTR-B DTE Term Ready	CD
DTE	CID1 Cable ID	*2/21				
DTE	CID3 Cable ID	*30/21				
DTE	DCEDTE_	*3/7				
	Signal Ground	25		1	Signal Ground	
	Signal Common	16		7	Signal Common	AB
	Signal DRAIN	1		7		

Note: * For DTE attach DCEDTE_ pin #3 to pin #7
 * For Cable ID attach CID1 pin #2 to pin #21
 * For Cable ID attach CID3 pin #30 to pin #21

B.7 EIA-530A / DTE CABLE

Cable Part Number: 9380420

Table B-8 EIA-530A / DTE

Connector # 1 (36 Pin Male Conn. w/Back Shell) EIA-530A / DTE			P A I R	Connector # 2 (DB 25 Pin Male Conn. w/Back Shell) EIA-530A / DCE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	TXD-A Trans. Data	5	A	2	TXD-A Trans. Data	BA
DCE	TXD-B Trans. Data	23		14	TXD-B Trans. Data	BA
DTE	RXD-A Rec. Data	10	B	3	RXD-A Rec. Data	BB
DTE	RXD-B Rec. Data	28		16	RXD-B Rec. Data	BB
DTE	CTS-A Clear to send	9	C	5	CTS-A Clear to send	CB
DTE	CTS-B Clear to send	27		13	CTS-B Clear to send	CB
DCE	RTS-A Req. to Send	8	D	4	RTS-A Req. to Send	CA
DCE	RTS-B Req. to Send	26	D	19	RTS-B Req. to Send	CA
DTE	DCD-A Carrier Detect	6	E	8	DCD-A Carrier Detect	CF
DTE	DCD-B Carrier Detect	24		10	DCD-B Carrier Detect	CF
DTE	TXC-A Trans. Timing	17	F	15	TXC-A Trans. Timing	DB
DTE	TXC-B Trans. Timing	35		12	TXC-B Trans. Timing	DB
DTE	RXC-A Rec. Timing	13	G	17	RXC-A Rec. Timing	DD
DTE	RXC-B Rec. Timing	31		9	RXC-B Rec. Timing	DD
DCE	SCTE-A Trans. Timing	15	H	24	SCTE-A Trans. Timing	DA
DCE	SCTE-B Trans. Timing	33		11	SCTE-B Trans. Timing	DA
DTE	RI Ring Indicator	11		22	RI Ring Indicator	RI
DCE	RL Remote loopback	36		21	RL Remote loopback	RL
DCE	LL Local Loopback	18		18	LL Local Loopback	LL
DTE	TM Test Mode	29		25	TM Test Mode	TM

Table B-8 EIA-530A / DTE (Continued)

Connector # 1 (36 Pin Male Conn. w/Back Shell) EIA-530A / DTE			P A I R	Connector # 2 (DB 25 Pin Male Conn. w/Back Shell) EIA-530A / DCE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DTE	DSR DCE Set Ready	4	I	6	DSR DCE Set Ready	CC
DCE	DTR DTE Term Ready	14	J	20	DTR DTE Term Ready	CD
DTE	CID2 Cable ID	*20/21				
DTE	CID1 Cable ID	*2/21				
DTE	DCEDTE_	*3/7				
	Signal Ground	25		1	Signal Ground	
	Signal Common	16		7	Signal Common	AB
	Signal Common	34		23	Signal Common	AC
	Signal DRAIN	1		7		

Note: * For DTE attach DCEDTE_ pin #3 to pin #7
 * For Cable ID attach CID2 pin #20 to pin #21
 * For Cable ID attach CID1 pin #2 to pin #21

B.8 RS449/DCE CABLE

Cable Part Number: 9380419

Table B-9 RS449 / DCE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) RS449 / DCE			P A I R	Connector # 2 (DB 37 Pin Female Conn. w/Back Shell) RS449 / DTE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
	Signal Common	25		20	Signal common	RC
DTE	DSR-A DCE Ready	14	A	11	DSR-A DCE Mode	DM
DTE	DSR-B DCE Ready	32		29	DSR-B DCE Mode	DM
DCE	TXD-A Transmit Data	10	B	4	TXD-A Transmit Data	SD
DCE	TXD-B Transmit Data	28		22	TXD-B Transmit Data	SD
DTE	DCD-A Receiver Ready	6	C	13	DCD-A Receiver Ready	RR
DTE	DCD-B Receiver Ready	24		31	DCD-B Receiver Ready	RR
DCE	RTS-A Req. to Send	9	D	7	RTS-A Req. to Send	RS
DCE	RTS-B Req. to Send	27		25	RTS-B Req. to Send	RS
DTE	CTS-A Clear to Send	8	E	9	CTS-A Clear to Send	CS
DTE	CTS-B Clear to Send	26		27	CTS-B Clear to Send	CS
DTE	RXD-A Receive Data	5	F	6	RXD-A Receive Data	RD
DTE	RXD-B Receive Data	23		24	RXD-B Receive Data	RD
DTE	RI Ring Indicator	18		15	RI Incoming Call	IC
DTE	RXC-A Receive Timing	15	G	8	RXC-A Receive Timing	RT
DTE	RXC-B Receive Timing	33		26	RXC-B Receive Timing	RT
DCE	DTR-A Terminal Ready	4	H	12	DTR-A Terminal Ready	TR
DCE	DTR-B Terminal Ready	22		30	DTR-B Terminal Ready	TR
DCE	SCTE-A Transmit Timing	13	I	17	SCTE-A Terminal Timing	TT
DCE	SCTE-B Transmit Timing	31		35	SCTE-B Terminal Timing	TT

Table B-9 RS449 / DCE Cable (Continued)

Connector # 1 (36 Pin Male Conn. w/Back Shell) RS449 / DCE			P A I R	Connector # 2 (DB 37 Pin Female Conn. w/Back Shell) RS449 / DTE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DTE	TXC-A Transmit Timing	17	J	5	TXC-A Send Timing	ST
DTE	TXC-B Transmit Timing	35		23	TXC-B Send Timing	ST
DCE	LL Local Loopback	11		10	LL Local Loopback	LL
DTE	TM Test Mode	36		18	TM Test Mode	TM
DCE	RL Remote Loopback	29		14	RL Remote Loopback	RL
DTE	CID1 Cable ID	*2/21				
	Signal Common	16		19 37	Signal Ground common	Signal SG SC
	Shield DRAIN	1				

Note: * For Cable ID attach CID1 pin #2 to pin #21

B.9 CCITT V.35 / DCE CABLE

Cable Part Number: 9380418

Table B-10 CCITT V.35 / DCE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) CCITT V.35 / DCE			P A I R	Connector # 2 (M Series 34 Pin Female Conn. w/Back Shell) CCITT V.35 / DTE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	TXD-A Transmit Data	10	A	P	TXD-A Transmit Data	103
DCE	TXD-B Transmit Data	28		S	TXD-B Transmit Data	103
DTE	RXD-A Receive Data	5	B	R	RXD-A Receive Data	104
DTE	RXD-B Receive Data	23		T	RXD-B Receive Data	104
DTE	CTS Clear to Send	8		D	CTS Clear to Send	106
DCE	RTS Req. to Send	9		C	RTS Req. to Send	105
DTE	DCD Carrier Detect	6		F	DCD Carrier Detect	
DTE	TXC-A Transmit Timing	17	C	Y	TXC-A Transmit Timing	114
DTE	TXC-B Transmit Timing	35		AA	TXC-B Transmit Timing	114
DTE	RXC-A Receive Timing	15	D	V	RXC-A Receive Timing	115
DTE	RXC-B Receive Timing	33		X	RXC-B Receive Timing	115
DCE	SCTE-A Transmit Timing	13	E	U	SCTE-A Transmit Timing	113
DCE	SCTE-B Transmit Timing	31		W	SCTE-B Transmit Timing	113
DTE	RI Ring Indicator	18		J	RI Ring Indicator	125
DCE	RL Remote Loopback	29		N	RL Remote Loopback	140
DCE	LL Local Loopback	11		L	LL Local Loopback	141
DTE	TM Test Mode	36		NN	TM Test Mode	142
DTE	DSR DCE Set Ready	14		E	DSR Data Set Ready	107
DCE	DTR DTE Term Ready	4		H	DTR Data Term Ready	108
DTE	CID0 Cable ID	*19/21				

Table B-10 CCITT V.35 / DCE Cable (Continued)

Connector # 1 (36 Pin Male Conn. w/Back Shell) CCITT V.35 / DCE			P A I R	Connector # 2 (M Series 34 Pin Female Conn. w/Back Shell) CCITT V.35 / DTE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DTE	CID1 Cable ID	* 2/21				
	Signal Ground	25		A	Signal Ground	
	Signal common	16		B	Signal Common	102
	Shield DRAIN	1				

Note: * For Cable ID attach CID0 pin #19 to pin #21

* For Cable ID attach CID1 pin #2 to pin #21

B.10 RS232 / DCE CABLE

Cable Part Number: 9380415

Table B-11 RS232 / DCE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) RS232 / DCE			P A I R	Connector # 2 (DB 25 Pin Female Conn. w/Back Shell) RS232 / DTE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	TXD Transmit Data	10		2	TXD Transmit Data	BA
DTE	RXD Receive Data	5		3	RXD Receive Data	BB
DTE	CTS Clear to Send	8		5	CTS Clear to Send	CB
DCE	RTS Req. to Send	9		4	RTS Req. to Send	CA
DTE	DCD Carrier Detect	6		8	DCD Carrier Detect	
DTE	TXC Transmit Timing	17		15	TXC Transmit Timing	DB
DTE	RXC Receive Timing	15		17	RXC Receive Timing	DD
DCE	SCTE Transmit Timing	13		24	SCTE Transmit Timing	DA
DTE	RI Ring Indicator	18		22	RI Ring Indicator	CE
DCE	RL Remote Loopback	29		21	RL Remote Loopback	RL
DCE	LL Local Loopback	11		18	LL Local Loopback	LL
DTE	TM Test Mode	36		25	TM Test Mode	TM
DTE	DSR DCE Ready	14		6	DSR DCE Ready	CC
DCE	DTR DTE Ready	4		20	DTR DTE Ready	CD
DTE	CID0 Cable ID	*19/21				
	Signal Common	16		7	Signal Common	AB
	Shield DRAIN	1				

Note: * For Cable ID attach CID0 pin #19 to pin #2

B.11 CCITT X.21 / DCE CABLE

Cable Part Number: 9380417

Table B-12 CCITT X.21 / DCE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) CCITT X.21 / DCE			P A I R	Connector # 2 (DB 15 Pin Female Conn. w/Back Shell) CCITT X.21 / DTE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	TXD-A Transmit Data	10	A	2	TXD-A Transmit Data	T
DCE	TXD-B Transmit Data	28		9	TXD-B Transmit Data	T
DTE	RXD-A Receive Data	5	B	4	RXD-A Receive Data	R
DTE	RXD-B Receive Data	23		11	RXD-B Receive Data	R
DTE	CTS-A Clear to Send	8	C	5	CTS-A Clear to Send	I
DTE	CTS-B Clear to Send	26		12	CTS-B Clear to Send	I
DCE	RTS-A Req. to Send	9	D	3	RTS-A Req. to Send	C
DCE	RTS-B Req. to Send	27		10	RTS-B Req. to Send	C
DTE	RXC-A Receive Timing	15	E	6	RXC-A Receive Timing	S
DTE	RXC-B receive Timing	33		13	RXC-B receive Timing	S
DTE	CID2 Cable ID	*20/21				
	Signal Common	16		8	Signal Common	G
	Shield DRAIN	1				

Note: * For Cable ID attach CID2 pin #20 to pin #21

B.12 EIA-530 / DCE CABLE

Cable Part Number: 9380416

Table B-13 EIA-530 / DCE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) EIA-530 / DCE			P A I R	Connector # 2 (DB 25 Pin Female Conn. w/Back Shell) EIA-530 / DTE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	TXD-A Trans. Data	10	A	2	TXD-A Trans. Data	BA
DCE	TXD-B Trans. Data	28		14	TXD-B Trans. Data	BA
DTE	RXD-A Rec. Data	5	B	3	RXD-A Rec. Data	BB
DTE	RXD-B Rec. Data	23		16	RXD-B Rec. Data	BB
DTE	CTS-A Clear to send	8	C	5	CTS-A Clear to send	CB
DTE	CTS-B Clear to send	26		13	CTS-B Clear to send	CB
DCE	RTS-A Req. to Send	9	D	4	RTS-A Req. to Send	CA
DCE	RTS-B Req. to Send	27	D	19	RTS-B Req. to Send	CA
DTE	DCD-A Carrier Detect	6	E	8	DCD-A Carrier Detect	CF
DTE	DCD-B Carrier Detect	24		10	DCD-B Carrier Detect	CF
DTE	TXC-A Trans. Timing	17	F	15	TXC-A Trans. Timing	DB
DTE	TXC-B Trans. Timing	35		12	TXC-B Trans. Timing	DB
DTE	RXC-A Rec. Timing	15	G	17	RXC-A Rec. Timing	DD
DTE	RXC-B Rec. Timing	33		9	RXC-B Rec. Timing	DD
DCE	SCTE-A Trans.Timing	13	H	24	SCTE-A Trans.Timing	DA
DCE	SCTE-B Trans.Timing	31		11	SCTE-B Trans.Timing	DA
DCE	RL Remote loopback	29		21	RL Remote loopback	RL
DCE	LL Local Loopback	11		18	LL Local Loopback	LL
DTE	TM Test Mode	36		25	TM Test Mode	TM
DTE	DSR-A DCE Set Ready	14	I	6	DSR-A DCE Set Ready	CC
DTE	DSR-B DCE Set Ready	32		22	DSR-B DCE Set Ready	CC

Table B-13 EIA-530 / DCE Cable (Continued)

Connector # 1 (36 Pin Male Conn. w/Back Shell) EIA-530 / DCE			P A I R	Connector # 2 (DB 25 Pin Female Conn. w/Back Shell) EIA-530 / DTE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	DTR-A DTE Term Ready	4	J	20	DTR-A DTE Term Ready	CD
DCE	DTR-B DTE Term Ready	22		23	DTR-B DTE Term Ready	CD
DTE	CID1 Cable ID	*2/21				
DTE	CID3 Cable ID	*30/21				
	Signal Ground	25		1	Signal Ground	
	Signal Common	16		7	Signal Common	AB
	Signal DRAIN	1		7		

Note: * For Cable ID attach CID1 pin #2 to pin #21

* For Cable ID attach CID3 pin #30 to pin #21

B.13 EIA-530A / DCE CABLE

Cable Part Number: 9380421

Table B-14 EIA_530A / DCE Cable

Connector # 1 (36 Pin Male Conn. w/Back Shell) EIA-530A / DCE			P A I R	Connector # 2 (DB 25 Pin Female Conn. w/Back Shell) EIA-530A / DTE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	TXD-A Trans. Data	10	A	2	TXD-A Trans. Data	BA
DCE	TXD-B Trans. Data	28		14	TXD-B Trans. Data	BA
DTE	RXD-A Rec. Data	5	B	3	RXD-A Rec. Data	BB
DTE	RXD-B Rec. Data	23		16	RXD-B Rec. Data	BB
DTE	CTS-A Clear to send	8	C	5	CTS-A Clear to send	CB
DTE	CTS-B Clear to send	26		13	CTS-B Clear to send	CB
DCE	RTS-A Req. to Send	9	D	4	RTS-A Req. to Send	CA
DCE	RTS-B Req. to Send	27	D	19	RTS-B Req. to Send	CA
DTE	DCD-A Carrier Detect	6	E	8	DCD-A Carrier Detect	CF
DTE	DCD-B Carrier Detect	24		10	DCD-B Carrier Detect	CF
DTE	TXC-A Trans. Timing	17	F	15	TXC-A Trans. Timing	DB
DTE	TXC-B Trans. Timing	35		12	TXC-B Trans. Timing	DB
DTE	RXC-A Rec. Timing	15	G	17	RXC-A Rec. Timing	DD
DTE	RXC-B Rec. Timing	33		9	RXC-B Rec. Timing	DD
DCE	SCTE-A Trans.Timing	13	H	24	SCTE-A Trans.Timing	DA
DCE	SCTE-B Trans.Timing	31		11	SCTE-B Trans.Timing	DA
DTE	RI Ring Indicator	18		22	RI Ring Indicator	RI
DCE	RL Remote loopback	29		21	RL Remote loopback	RL

Table B-14 EIA_530A / DCE Cable (Continued)

Connector # 1 (36 Pin Male Conn. w/Back Shell) EIA-530A / DCE			P A I R	Connector # 2 (DB 25 Pin Female Conn. w/Back Shell) EIA-530A / DTE		
Dir To	Signal Name	Pin #		Pin #	Signal Name	Mne- monic
DCE	LL Local Loopback	11		18	LL Local Loopback	LL
DTE	TM Test Mode	36		25	TM Test Mode	TM
DTE	DSR DCE Set Ready	14	I	6	DSR DCE Set Ready	CC
DCE	DTR DTE Term Ready	4	J	20	DTR DTE Term Ready	CD
DTE	CID2 Cable ID	*20/21				
DTE	CID1 Cable ID	*2/21				
	Signal Ground	25		1	Signal Ground	
	Signal Common	16		7	Signal Common	AB
	Signal Common	34		23	Signal Common	AC
	Signal DRAIN	1		7		

Note: * For Cable ID attach CID2 pin #20 to pin #21

* For Cable ID attach CID1 pin #2 to pin #21

